



Characterization of Titan's winds in coordination with the Huygens Probe entry

D. Luz (1,2), T. Civeit (3), R. Courtin (1), J.-P. Lebreton (3), D. Gautier (1), P. Rannou (4), O. Witasse (3), A. Kaufer (5), F. Ferri (6), L. Lara (7), T. Livengood (8), T. Kostiuk (8)

(1) LESIA-Observatoire de Paris; (2) Observatório Astronómico de Lisboa; (3) ESTEC-Research and Scientific Support Department, ESA; (4) Service d'Aéronomie-IPSL; (5) European Southern Observatory; (6) Università di Padova; (7) Instituto de Astrofísica de Andalucía; (8) NASA-Goddard Space Flight Center, USA

The Huygens Probe has successfully entered Titan's atmosphere in the morning of the 14th of January 2005. With the aim of characterizing the zonal wind flow in Titan's stratosphere close to the time of entry, we have made coordinated observations at the VLT in the nights of the 7th, 12th, 14th and 15th of January. The UVES instrument, mounted on the Kueyen-UT2 telescope has been used, which simultaneously achieves high spectral resolving power and high spatial resolution. The field has been derotated in order to align the 0.3-arcsec aperture perpendicularly to Titan's rotation axis. In this configuration, spatial information in the East-West direction is preserved in a set of spectra in the direction perpendicular to dispersion. The observations have been made in the wavelength range 4200-6200 Å, probing a wide region between 110 and 270 km altitude. We shall present measurements of zonal winds obtained with the technique of absolute accelerometry (Connes, 1985, ApSS 110, 211; Civeit et al., 2005, A&A, in press) and compare with other available measurements.

[D. Luz acknowledges support from Fundação para a Ciência e a Tecnologia, grant SFRH-BPD-3630-2000.]